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QUERCUS LOBATA

ROBLE OR VALLEY OAK

RANCHO SANTA ANA BOTANIC GARDEN
of the
NATIVE PLANTS OF CALIFORNIA
Santa Ana Cañon, Orange County, California
Established 1927 in Memory of
JOHN W. BIXBY

QUERCUS LOBATA
ROBLE OR VALLEY OAK

Fagaceae Beech Family

Deciduous tree of great stature; young trees rather strict and narrow in habit; mature trees 40-100 ft. high (rarely 125 ft.), usually with a crown broader than the height; trunk 2-8 or even 10 ft. in diam., soon divided into numerous massive branches, which, in the characteristic form, end in long, drooping or pendulous branchlets; bark dark brown to ashy gray, broken into somewhat rectangular plates 1-2 in. across. Leaves alternate, 3-4 in. long (rarely 5-6 in.), 2-3 in. broad, oblong to obovate, green above, lighter beneath and with short hairs, variously lobed, the 4-6 pairs of lobes sometimes distinct almost to the mid-rib, the terminal portion of each lobe usually 2-4 toothed, but not sharp or spine-tipped. Flowers without petals, monoecious (staminate and pistillate separate on same tree), appearing with or just before the new leaves (about March). Staminate flowers in yellowish, drooping catkins 1-3 in. long; calyx lobes 6-8; stamens 8-11. Pistillate flowers mostly solitary (sometimes 2 or 3) in an axil, each in a many-bracted involucre enclosing the calyx and 3-celled ovary which has nearly sessile stigmas. The ovary develops into a single-seeded fruit known as the acorn (rarely 2-seeded), surrounded at the base by the involucral scales which become the warty cup, covering $\frac{1}{4}$-$\frac{1}{3}$ of the acorn which matures the first autumn (Sept.-Nov.). Acorns rich tan, $1\frac{1}{2}$-$2\frac{1}{2}$ in. long, $\frac{1}{2}$-1 in. in diam., usually broadest well below the middle, and tapering to a slender, but blunt point; shell of acorn glabrous within. In germination the cotyledons remain within the acorn shell; the hypocotyl emerges from the pointed end, elongates rapidly and gives rise to the long taproot; the first few leaves are 1-2 in. long, 1-$1\frac{1}{2}$ in. broad, and irregularly toothed (not deeply incised as in mature leaves).

The genus *Quercus* (Latin name for Oak) is widely distributed in the northern hemisphere and contains about 200-300 species. In California about 20 kinds are known, varying in size from small shrubs to huge trees. They inhabit almost all parts of the state except the desert valleys.

Quercus lobata (the specific name meaning lobed is in reference to the leaves) was described in 1801 by Don Luis Neé, Spanish botanist. The original specimens were probably obtained a few miles inland from Monterey. Neé's publication of this species escaped the notice of English and American botanists for many years, resulting in several later names being proposed. Of these, *Q. Hindsii* by Bentham (1844) and *Q. longiglanda* by Torrey and Fremont (1848) are the most important. Prof. Jepson (Fl. Calif. **1**: 353-54. 1909) has proposed three forms and two varieties of *Quercus lobata,* based upon vegetative and fruiting differences. These appear to account for the major races to be met with in the field, but can hardly be discussed here.

Roble is the Spanish-Californian name for *Quercus lobata,* and is perhaps the most distinctive common name which has been applied. This

oak is also known as the Valley Oak and California White Oak.

Distribution of the Roble Oak is entirely in California. In southern California it is known from a few trees near Pasadena, larger stands near Saugus and Chatsworth, while at Calabasas (Santa Monica Mts.) it becomes abundant. From these points it extends northward through the Coast Ranges, the Great Valley and the neighboring foothills. Its northernmost stations are in Shasta and Trinity counties. It ascends to elevations of about 3500 ft., but attains its best development in lowland valleys in rich, deep soils. Magnificent specimens can be seen in the vicinity of Paso Robles, Jolon, Visalia, Stockton, Sacramento, Clear Lake and Chico. At the latter locality a superb giant has been named the "Sir Joseph Hooker Oak" in honor of the famous English botanist by that name. Another tree in Priests Valley, San Benito County, is said by Prof. Abrams (Ill. Fl. Pac. States **1**: 518. 1923) to be the largest of all known oaks, and has a trunk 36 ft. 7 in. in circumference.

Quercus lobata is a remarkable tree in its ability to thrive under extremes of moisture and drouth. In the San Joaquin Valley the trunks are often submerged with 1 or 2 ft. of water for weeks during the winter months, and again when the June floods inundate the lowlands. On the other hand, trees in the arid Coast Ranges seem to survive even the driest years without injury.

Indians depended upon the Roble Oak for a major portion of their food. They formerly gathered huge quantities of acorns, a task made easy, since in a good season a single tree would yield several large sacks. Farmers in regions where this oak is abundant, still depend upon its acorns for fattening their hogs. Some thrifty individuals even gather truck loads of acorns for prolonged feeding during the fall months. Aside from its use as fuel the wood is of no value.

Propagation of *Quercus lobata* is from acorns which should be planted as soon as ripe for best results. The acorns may be planted out where mature trees are wanted if proper care can be given in protecting them from rodents (dipping the lower $\frac{2}{3}$ of each acorn in tar is suggested). The acorns may also be germinated in boxes or beds of sand and then handled by any of the following methods: 1) placed in the ground where wanted, using several per hole and later thinning; 2) lined out in nursery rows for a season, during which time they should attain heights of 2-4 ft. and can be handled bare root when dormant; 3) planted in container, preferably gallon cans or larger, and grown for a season. We have grown hundreds of trees by each of the above mentioned methods. One especially fine specimen tree now stands 32 ft. high, has a spread of 15 ft., and a trunk 12 in. in diam. just above the ground. It was grown from an acorn collected in the fall of 1930, which was planted direct in the ground.

To our knowledge, no other deciduous oak grows more rapidly, nor is at home in California under so many diverse conditions. For these reasons it should be planted extensively in California gardens. We recommend its use for highways, parkways, parks, and private homesites, or wherever a large deciduous tree can be used.

CARL B. WOLF.

RANCHO SANTA ANA BOTANIC GARDEN

Dedication of Garden Foundation to the Board of Trustees for the Rancho Santa Ana Botanic Garden of the Native Plants of California:

"THE NATURE, OBJECT AND PURPOSE OF THE INSTITUTION HEREBY FOUNDED AND TO BE MAINTAINED HEREUNDER.

ITS NATURE: A botanic garden of the native plants of California, herbarium and botanical library, containing living and/or preserved specimens of trees, plants and flowers native to California, and literature relating thereto.

ITS OBJECT: The preservation and improvement of the property now transferred and such property as may hereafter be transferred to the Trustees for those who not only wish to enjoy, but to study, assembled in one accessible locality, native California plants; and for the advancement of science and education with reference to plant life indigenous to the State of California.

ITS PURPOSES: (a) An institution founded primarily for scientific research in the field of local botany.

(b) To preserve the native California flora, try to replenish the depleted supply of some of the rarest plants which are rapidly being exterminated, and bring together in a comparatively small area as complete a collection of the rich store of native California plants as can be grown in this southern section of the state, thereby promoting the general welfare of the people of the state by providing the means for encouraging and carrying on the above mentioned activities in said state and by doing such other things as may be necessary and desirable to carry out the objects hereof."

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